

**SECRET**

DFD 3435-59  
28 May 1959

**MEMORANDUM FOR:** Chief, Materiel Branch, DFD-DD/P

**SUBJECT :** Motor Drive Assemblies for MF-12570 Recorder

25X1

**REFS :** A. ☐ 7713 (IN 09266)  
B. ☐ 8615 (OUT 94773)

1. The problems associated with the three motor drive units for the MF-12570 recorder, as reported in reference A, have been investigated per the request of reference B. All phases of the problem were discussed on 21 May 1959 at a meeting at the contractor's plant which was attended by Depot, Contractor and Headquarters personnel.

2. The contractor submitted a report showing previous history of trouble with this drive assembly. It was brought out that the motor component is not exclusively to blame for the problems. Since the unit consists of a motor, worm gear, driving gears, springs, etc., the problem of mechanical assembly, fitting and alignment comprise an important part of the procedure necessary to produce a reliable component. This is particularly true in the case of these miniaturized drive units. The contractor's technical representatives are aware of the requirements of the problem and have established complete testing and alignment facilities within their engineering laboratories to thoroughly overhaul the drive assemblies as they are returned from the Depot. This is in contrast to the previous procedure wherein the units were returned to the manufacturing components of the contractor's organization to be repaired on a time available basis. This previous procedure was not satisfactory due to lack of technical control over the repair methods, unfamiliar people doing the work due to labor turnover, and the possibility, or rather probability, of a long delay due to holding units awaiting build up of a quantity. Under the new system, the mechanical fitting and assembly can be held to very close tolerances, and the electrical and operating characteristics of each unit can be accurately checked by experienced technical personnel. They have promised (BACK 0511 IN 09541) a two week turn around time on most units. In a relatively

25 YEAR RE-REVIEW

**SECRET**

**SECRET**

BFD 3435-59

Page 2

for cases, where the motor is completely burned out, this time must be extended to include the procurement time for new motors. It was also pointed out that, while each motor requires field maintenance of the governor brushes each 15 hours, the commutator brushes are not accessible for routine maintenance (require major disassembly) and often become excessively worn and extremely noisy both mechanically and electrically. There is also evidence that lubrication problems are present that require frequent and complete disassembly, cleaning and lubricating. For these reasons, it is recommended that the motors be returned after each 100 hours of airborne operation. These maintenance procedures have been outlined to the field bases.

3. There are no problems of rotation of drive assemblies in warehouse stock at the Depot. The depot representatives stated that two days was ample time to handle either an incoming or outgoing shipment. The major depot problem is not having sufficient stock on hand to meet all field replacement requests at all times. An investigation of the reasons for this shortage revealed that the FAK and depot stock levels were originally set up on the quantities of recorders used in the original System One. Since that time Systems Three and Six have been added without increasing either the FAK or depot stock levels. A recount of drive assembly failures over the past year, coupled with repair, shipping, and turn around time indicates a requirement for an increase in FAK spares to 4 of each type and depot stocks to 8 of each type. The general requirements for FAK and depot stock increases are summarized in the following table:

<u>Description</u>	<u>MP-Number</u>	<u>Recommended Quantity</u>		<u>Costs</u>
		<u>FAK</u>	<u>Depot</u>	
Capstan Drive	MP-10174	4	8	\$268.50
Supply Assembly	MP-10184	4	8	\$275.00
Take Up Assembly	MP-10168	4	8	\$275.00

The above costs do not include the 9% G & A and the 9% profit.

4. In conclusion it may be stated that adequate overhaul at the contractor's plant, improved field maintenance procedures, and a 100 hour factory overhaul will eliminate the motor problem from the technical side. Logistically an increase in FAK and Depot

**SECRET**

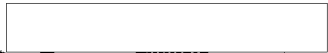
**SECRET**

IPD 3435-59

Page 3

stocks in accordance with the above chart is recommended and the necessary authorization for additional units is requested.

25X1

  
Chief, Communications Section  
IPD-IE/P

**Distribution:**

Orig & 1 - Addressec

- 1 - E-6
- ~~1~~ - RI
- 1 - Chrono

WWE/bs

**SECRET**